

# APPENDIX

## DEFINITIONS AND EXPLANATIONS

**Population coverage.** The figures shown relate to the civilian population excluding inmates of institutions.

**Day care arrangements.** Data on day care arrangements for children 7 to 13 years old were based on replies to the following question included in the October 1974 Current Population Survey:

38. What kind of arrangements (other than school) were made for the day time care of . . . during the last two weeks?

Cared for in day care center (full-day or part-day) at parent's expense . . . <input type="radio"/>	(Ask 39)	Cared for in non-relative's home at the expense of parent <input type="radio"/>	} (End questions)
None (cared for in own home by parent only) . . . <input type="radio"/>	} (End questions)	Cared for in non-relative's home not at the expense of parent . . . <input type="radio"/>	
Child cares for self . . . . <input type="radio"/>		Other arrangement . . . . <input type="radio"/>	
Cared for in own home by other relative . . . . <input type="radio"/>		(Specify)	
Cared for in own home by non-relative <input type="radio"/>			
Cared for in relative's home . . . <input type="radio"/>			

Information on care of children 3 to 6 years old was obtained in the February 1975 Current Population Survey and was based on answers given to the following questions:

37. Who cares for . . . during the day (when . . . is not in school)?

Mother . . . . . <input type="radio"/>	} (End questions)	Other relative <input type="radio"/>	} (Ask 38)
Father . . . . . <input type="radio"/>		Nonrelative . . . <input type="radio"/>	
Child cares for self <input type="radio"/>			

38. Does the family pay for this care?

Yes ☐ No ☐

(Ask 39)

39. Where is . . . cared for?

Parent's home . . . . ☐ (End questions)

Someone else's home ☐ (Ask 40)

Day care center . . . ☐

**Mother.** A woman who was reported as wife of the household head or as the head of household was considered to be the mother of any children in the household (regardless of the children's relationship to the household head).

**Employed.** Employed persons comprise (1) all civilians who, during the survey week, did any work at all as paid employees or in their own business or

profession, or on their own farm, or who worked 15 hours or more as unpaid workers on a farm or in a business operated by a member of the family; and (2) all those who were not working but who had jobs or businesses from which they were temporarily absent because of illness, bad weather, vacation, or labor-management dispute, or because they were taking time off for personal reasons, whether or not they were paid by their employers for time off, and whether or not they were seeking other jobs. Excluded from the employed group are persons whose only activity consisted of work around the house (such as own home housework, painting or repairing own home, etc.) or volunteer work for religious, charitable, and similar organizations.

**Unemployed.** Unemployed persons are those civilians who, during the survey week, had no employment but were available for work and (1) had engaged in any specific jobseeking activity within the past 4 weeks, such as registering at a public or private employment office, meeting with prospective employers, checking with friends or relatives, placing or answering advertisements, writing letters of application, or being on a union or professional register; (2) were waiting to be called back to a job from which they had been laid off; or (3) were waiting to report to a new wage or salary job within 30 days.

**Civilian labor force.** The "civilian labor force" includes all civilians 16 years old and over classified as employed or unemployed during the survey week.

**Not in the labor force.** All civilians 16 years old and over who are not classified as employed or unemployed are defined as "not in the labor force." This group includes persons engaged only in own home housework, attending school, or unable to work because of long-term physical or mental illness; persons who are retired or too old to work, seasonal workers for whom the survey week fell in an off season, and the voluntarily idle. Persons doing only unpaid family work (less than 15 hours) are also classified as not in the labor force.

**Full-time and part-time workers.** Full-time workers are persons who worked 35 hours or more during the survey week and those who worked 1 to 34 hours but usually work full time. Part-time workers are persons who worked 1 to 34 hours during the survey week and usually work only 1 to 34 hours. Persons with a job but not at work during the survey week are classified according to whether they usually work full or part time.

**School enrollment.** The school enrollment statistics from the current surveys are based on replies to the enumerator's inquiry as to whether the person was enrolled in school. Enumerators were instructed to count as enrolled anyone who had been enrolled at any time during the current term or school year in any type of graded public, parochial, or other private school in the "regular" school system. Such schools include nursery schools, kindergartens, elementary schools, and high schools. Attendance may be on either a full-time or part-time basis. Thus, regular schooling is that which may advance a person toward an elementary or high school diploma.

Children enrolled in nursery schools and kindergarten are included in the enrollment figures for "regular" schools and are also shown separately.

A nursery school is defined as a group or class that is organized to provide educational experiences for children during the year or years preceding kindergarten. It includes instruction as an important and integral phase of its program of child care. Private homes in which essentially custodial care is provided are not considered nursery schools.

"Special" schools are those which are not in the regular school system. Children attending "special" schools are included in the enrollment figures in this report.

**Head Start.** Children enrolled in "Head Start" programs or similar programs sponsored by local agencies to provide preschool education to young children are counted under "Nursery" or "Kindergarten" as appropriate.

**Public or private school.** In this report, a public school is defined as any educational institution operated by publicly elected or appointed school officials and supported by public funds. Private schools included educational institutions established and operated by religious bodies, as well as those which are under other private control. In cases where enrollment was in a school program which was both publicly and privately controlled or supported, enrollment was counted according to whether it was primarily public or private.

**Age.** The age classification is based on the age of the person at [his] last birthday.

**Race.** The population is divided into three groups on the basis of race: White, Black, and "other races." The last category includes Indians, Japanese, Chinese, and any other race except White and Black.

**Marital status.** The marital status classification identifies four major categories: single, married, widowed, and divorced. These terms refer to the marital status at the time of the survey.

The category "married" is further divided into "married, spouse present," "separated," and "other-married, spouse absent." A person was classified as "married, spouse present" if the husband or wife was reported as a member of the household, even though he or she may have been temporarily absent on business or on vacation, visiting, in a hospital, etc., at the time of the enumeration. Persons reported as "separated" included those with legal separations, those living apart with intentions of obtaining a divorce, and other persons permanently or temporarily separated because of marital discord. The group "other married, spouse absent" includes married persons living apart because either the husband or wife was employed, and living at a considerable distance from home, had moved to another area, or had a different place of residence for any other reason except separation as defined above.

**Family income.** Income as defined in this report represents the combined total money income of the family before deductions for personal taxes, Social Security, bonds, etc. It is the algebraic sum of money wages and salaries, net income from self-employment, and income other than earnings received by all family members during the 12 months prior to the surveys. It should be noted that, although the family income statistics refer to receipts during the previous 12 months, the characteristics of the person, such as age, marital status, etc., and the composition of families refer to the date of the survey.

The income tables include in the lowest income group (less than \$5,000) those who were classified as having no income in the previous 12 months and those reporting a loss in net income from farm and nonfarm self-employment or in rental income.

The income tables in this report include a separate category for families for whom no income information was obtained. In most of the other Current Population Survey reports showing income data the missing income data have been allocated.

The money income level of families shown in this report may be somewhat understated. Income data from the October control card are based on the respondent's estimate of total family money income for the preceding 12 months coded in broad, fixed income intervals. Income data collected in the March supplement to the Current Population Survey are based on responses to 8 direct questions asked of all persons 14 years old and over identifying 14 different sources of income and cover the preceding calendar year.

Previous research has shown that the use of broad income intervals to record money income tends to reduce the rate of nonreporting while increasing the likelihood that the amounts reported will be significantly understated as compared with results from more detailed questions.

## SOURCE AND RELIABILITY OF THE ESTIMATES

**Source of data.** The estimates contained in these tables are based on data obtained from supplements to the Current Population Survey (CPS) in October 1974 and February 1975. The CPS sample was initially selected from the 1970 census files and is updated continuously to reflect new construction where possible (See section "Nonsampling Variability" below). This sample is spread over 461 areas comprising 923 counties and independent cities. These areas are chosen to provide coverage in each State and the District of Columbia. Approximately 47,000 occupied households are eligible for interview each month. Of this number, 2,000 occupied units, on the average, are visited but interviews are not obtained because the occupants are not found at home after repeated calls or are unavailable for some other reason. In addition to the 47,000, there are also about 8,000 sample units in an average month which are visited but are found to be vacant or otherwise not to be interviewed.

The CPS deals mainly with labor force data. Questions relating to labor force participation are asked about each member 14 years old or older in the household. In October 1974, questions were asked about care arrangements for children 7 to 13 years old; in February 1975, similar questions were asked about children 3 to 6 years old.

The estimation procedure used for both the CPS data and supplemental data involves the inflation of the weighted sample results to independent estimates of the civilian noninstitutional population of the United States by age, race, and sex. These independent estimates were based on statistics from the 1970 Census of Population; statistics on births, deaths, immigration, and emigration; and statistics on the strength of the Armed Forces.

**Reliability of the estimates.** Since the estimates in these tables were based on a sample, they may differ somewhat from the figures that would have been obtained if a complete census had been taken using the same schedules, instructions, and enumerators. There are two types of errors possible in an estimate based on a sample survey—sampling and nonsampling. For estimates in this report, indications of the magnitude of sampling error are provided, but the extent of the nonsampling error is unknown. Consequently, particular care should be exercised in the interpretation of figures based on a relatively small number of cases or on small differences between estimates.

**Nonsampling variability.** As in any survey work, the results are subject to errors of response and nonreporting in addition to sampling variability. Nonsampling errors can be attributed to many sources, e.g., inability to obtain information about all cases in the sample, definitional difficulties, differences in the interpretation of questions, inability or unwillingness to provide

correct information on the part of respondents, inability to recall information, mistakes made in collection such as in recording or coding the data, mistakes made in processing the data, mistakes made in estimating values for missing data, and failure to represent all units with the sample (undercoverage). The approximate magnitude of two sources of undercoverage in CPS is known and is described next.

Approximately 600,000 conventional new construction units were issued building permits prior to the 1970 census but building was not completed by the time of the census (i.e., April 1970); these units have no representation in the CPS sample. Conventional new construction, for which building permits were issued after the census, is represented. In addition to undercoverage of conventional new construction, CPS misses approximately one-fourth of all new mobile homes (i.e., about 400,000 units). These are missed because there is no systematic sampling procedure to provide representation of mobile homes constructed since the 1970 census.

**Sampling variability.** The standard errors given in the tables are primarily measures of sampling variability, that is, of the variations that occur by chance because a sample rather than the whole of the population was surveyed. As calculated, the standard error also partially measures the effect of certain response and enumeration errors, but it does not measure any systematic biases in the data. The chances are about 68 out of 100 that an estimate from the survey differs from a complete census figure by less than the standard error. The chances are about 90 out of 100 that this difference would be less than 1.6 times the standard error, and chances are 95 out of 100 that the difference would be less than twice the standard error.

All the statements of comparison appearing in the text are significant at a 1.6 standard error level or better, and most are significant at a level of more than 2.0 standard errors. This means that for most differences cited in the text, the estimated difference is greater than twice the standard error of the difference. Statements of comparison qualified in some way (e.g., by use of the phrase, "some evidence") have a level of significance between 1.6 and 2.0 standard errors.

**Note when using small estimates.** Percent distributions are shown in the report only when the base of the percentage is 75,000 or greater. Because of the large standard errors involved, there is little chance that percentages would reveal useful information when computed on a smaller base. Estimated totals are shown, however, even though the relative standard errors of these totals are larger than those for corresponding percentages. These smaller estimates are provided primarily to permit such combinations of the categories as serve each user's needs.

**Note on comparisons with data from other surveys.** Data obtained from the Current Population Survey and other surveys and sources are not entirely comparable, due in large part to differences in interviewer training and experience and in the differing survey processes. This is an additional component of error not reflected in the standard error tables; therefore, caution should be used in comparing results between these different sources.

**Reliability of an estimated percentage.** The reliability of an estimated percentage, computed by using sample data for both numerator and denominator, depends upon both the size of the percentage and the size of the total upon which the percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more.

**Table A-1. Standard Errors of Estimated Numbers of Persons: Total or White Population**

(68 chances out of 100.  
Numbers in thousands)

Size of estimate	Standard error	Size of estimate	Standard error
25.....	9	4,000.....	112
50.....	13	5,000.....	124
100.....	19	7,500.....	146
250.....	29	10,000....	162
500.....	42	20,000....	189
1,000.....	58	30,000....	166
2,000.....	82	40,000....	49
3,000.....	97	50,000....	0

**Note:** For a particular characteristic, see table A-6 for the appropriate factor to apply to the above standard errors.

**Standard error tables and their use.** Instead of providing individual standard error tables for each characteristic of interest, generalized standard error tables for estimated numbers and estimated percentages, by race, are provided in tables A-1 through A-6 to conserve space. Table A-6 provides factors which must be used to calculate standard errors for each characteristic. These factors must be applied to the generalized standard errors in order to adjust for the combined effect of the sample design and the estimating procedure on the value of the characteristic. For example, to produce approximate standard errors for total or White estimates for family income data, multiply the appropriate figures in

tables A-1 or A-3 by the factor 0.94 from table A-6. The determination of the proper factor for a percentage depends upon the subject matter of the numerator of the percentage, not the denominator. For example, if a percent referred to the percentage of children 7 to 13 years old cared for in someone else's home, whose families make more than \$15,000 per year, then the factor for family income would be used.

**Table A-2. Standard Errors of Estimated Numbers of Persons: Black and Other Races**

(68 chances out of 100.  
Numbers in thousands)

Size of estimate	Standard error
25.....	11
50.....	16
100.....	22
250.....	35
500.....	50
1,000.....	65
2,000.....	81
3,000.....	86
4,000.....	80
5,000.....	61
7,500.....	0

**Note:** For a particular characteristic, see table A-6 for the appropriate factor to apply to the above standard errors.

The figures presented in tables A-1 through A-4 provide approximations to standard errors of various estimates shown in this report. In all the standard error tables, standard errors for intermediate values not shown may be approximated by interpolation. In order to derive standard errors that would be applicable to a wide variety of items and could be prepared at a moderate cost, a number of approximations were required. In addition, where two or more items have nearly equal standard errors, such as total population and White population, one table is used to represent them. As a result, the tables of standard errors (along with the factors) provide an indication of the order of magnitude of the standard errors rather than the precise standard error for any specific item.

Two sets of parameters (denoted as "a" and "b") were used to calculate the standard errors for persons shown in tables A-1 through A-4, they are presented in table A-5. The use of these parameters will be explained in later sections.

Table A-3. Standard Errors of Estimated Percentages of Persons: Total or White Population

(68 chances out of 100)

Base of percentage (thousands)	Estimated percentage					
	1 or 99	2 or 98	5 or 95	10 or 90	25 or 75	50
100.....	1.9	2.6	4.1	5.6	8.1	9.4
250.....	1.2	1.7	2.6	3.5	5.1	5.9
500.....	0.8	1.2	1.8	2.5	3.6	4.2
1,000.....	0.6	0.8	1.3	1.8	2.6	3.0
2,500.....	0.4	0.5	0.8	1.1	1.6	1.9
5,000.....	0.3	0.4	0.6	0.8	1.1	1.3
10,000.....	0.2	0.3	0.4	0.6	0.8	0.9
25,000.....	0.14	0.2	0.3	0.4	0.5	0.6
50,000.....	0.08	0.14	0.2	0.3	0.4	0.4

Note: For a particular characteristic, see table A-6 for the appropriate factor to apply to the above standard errors.

Table A-4. Standard Errors of Estimated Percentages of Persons: Black and Other Races

(68 chances out of 100)

Base of percentage (thousands)	Estimated percentage					
	1 or 99	2 or 98	5 or 95	10 or 90	25 or 75	50
100.....	2.2	3.1	4.9	6.7	9.7	11.2
250.....	1.4	2.0	3.1	4.3	6.1	7.1
500.....	1.0	1.4	2.2	3.0	4.3	5.0
1,000.....	0.7	1.0	1.5	2.1	3.1	3.5
2,500.....	0.4	0.6	1.0	1.3	1.9	2.2
5,000.....	0.3	0.4	0.7	1.0	1.4	1.6
10,000.....	0.2	0.3	0.5	0.7	1.0	1.1

Note: For a particular characteristic, see table A-6 for the appropriate factor to apply to the above standard errors.

**Standard errors of estimated numbers.** There are two ways to obtain the approximate standard error,  $\sigma_x$ , of an estimated number shown in this report.

## 1. Use the formula

$$\sigma_x = f\sigma \quad (1)$$

where  $f$  is the approximate factor from table A-6 and where  $\sigma$  is the standard error for total or White persons in table A-1 or the standard error for Black and other races in table A-2. Linear interpolation in tables A-1 and A-2 may be used to obtain standard errors for intermediate values not shown there.

2. More accurate results can be obtained by computing the estimated standard error of an estimated number using the following formula:

$$\sigma_x = f\sqrt{ax^2 + bx} \quad (2)$$

Here  $x$  is the size of the estimate (not in thousands),  $a$  and  $b$  are the parameters from table A-5 associated with the particular characteristic and  $f$  is the appropriate factor found in table A-6.

**Standard errors of estimated percentages.** The reliability of an estimated percentage, computed by using sample data for both numerator and denominator,

depends on both the size of the percentage and the size of the total upon which this percentage is based. Estimated percentages are relatively more reliable than the corresponding estimates of the numerators of the percentages, particularly if the percentages are 50 percent or more. There are two ways to obtain the approximate standard error,  $\sigma_{(x,p)}$ , of an estimated percentage.

1. Use the formula

$$\sigma_{x,p} = f\sigma \quad (3)$$

where  $f$  is the appropriate factor from table A-6 and  $\sigma$  is the standard error for total or White persons in table A-3 or the standard error for Black and other races in table A-4. When the numerator and denominator of the percentage are in different categories, use the table and factor indicated by the numerator. Linear interpolation in tables A-3 and A-4 may be used to obtain standard errors for intermediate values not shown there.

2. More accurate results can be obtained by computing the estimated standard error of an estimated percentage using the following formula:

$$\sigma_{(x,p)} = f\sqrt{\frac{b}{x} \cdot p(100-p)} \quad (4)$$

Here  $x$  is the size (not in thousands) of the subclass of the population which is the base of the percentage,  $p$  is the percentage ( $0 \leq p \leq 100$ ),  $b$  is the parameter in table A-5 associated with the particular type of characteristics in the numerator of the percentage and  $f$  is the appropriate factor from table A-6. When the numerator and denominator of the percentage are in different categories, use the table and factor indicated by the numerator.

Table A-5. Parameters for Estimated Standard Errors of Estimated Numbers and Percentages of Household and Family Characteristics

Population	a	b
Total or White.	-.000086	3500.2791
Black and other races.....	-.000853	5020.1527

**Illustration of the use of tables of standard errors.** Table 1 of this report shows that in February 1975 there were 2,917,000 3 to 6 year old children whose mothers worked full-time. The factor in table A-6 for labor force characteristics, total or White, is 0.65. Thus, formula (1) and table A-1 show the standard error of an estimate of this size to be approximately 62,000. The chances are 68 out of 100 that the estimate would have been a figure differing from a complete census figure by less than 62,000. The chances are 95 out of 100 that the estimate would have been a figure differing from a complete census figure by less than 124,000 (twice the standard error).

Table 1 also shows that of the 2,917,000 3 to 6 year old children mentioned above, 1,208,000 or 41.4 percent were usually cared for by one of the parents when they were not in school. The factor in table A-6 for household and family characteristics, total or White, is 1.00. Interpolation in table A-3 shows the standard error of 41.4 percent on a base of 2,917,000 to be 1.7.

Table A-6. "f" Factors to be Applied to Tables A-1 through A-4 to Approximate Standard Errors

Type of characteristic	Values of f for	
	Total or White (Table A-1 or A-3)	Black and Other (Table A-2 or A-4)
Household, family and marital status.....	1.00	1.00
Labor force of mother.....	0.65	0.51
Educational attainment and school enrollment of 7-13 year olds.....	0.77	0.75
Kindergarten and nursery school enrollment.....	0.70	(X)
Family income.....	0.94	(X)
Spanish.....	1.46	(X)

X Not applicable.

Thus the standard error of this estimate is approximately  $1.7 = 1.00 \times 1.7$ . Consequently, the chances are 68 out of 100 that the estimated 41.4 percent would be within 1.7 percentage points of a complete census figure. Chances are 95 out of 100 that the estimate would be within 3.4 percentage points of a complete census figure, i.e., the 95 percent confidence interval would be from 38.0 to 44.8.

**Standard error of a difference.** For a difference between two sample estimates, the standard error is approximately equal to the square root of the sum of the squared standard errors of the estimates; the estimates can be of numbers, percents, ratios, etc. This will represent the actual standard error quite accurately for the difference between two estimates of the same characteristic in two different areas, or for the difference between separate and uncorrelated characteristics in the same area. If, however, there is a high positive correlation between the two characteristics, the formula will overestimate the true standard error.

**Illustration of the computation of the standard error of a difference between estimated percentages.** Table 1 shows that of the 7,406,000 7 to 13 year old children in October 1974 whose mothers worked full-time, 3,960,000 or 53.5 percent were usually cared for by one of the parents while the children were not in school. The apparent difference between 41.4 percent for 3 to 6 year olds and 53.5 percent for 7 to 13 year olds, both groups whose mothers worked full-time and had some daytime care arrangements, is 12.1. The standard error,  $\sigma_x$ , of the 41.4 percent is 1.7, as shown above. Table A-6 shows that the factor for household and family characteristics, total or White, is 1.00. Table A-3 shows the standard error of 53.5 percent on a base of 7,406,000 to be 1.1. Thus, the standard error,  $\sigma_y$ , of the estimate is  $1.1 = 1.00 \times 1.1$ .

To get the standard error of the estimated difference,  $\sigma_{(x-y)}$ , use the following formula:

$$\sigma_{(x-y)} = \sqrt{\sigma_x^2 + \sigma_y^2} \quad (5)$$

Therefore, the standard error of the difference of 12.1 percent is about

$$2.0 = \sqrt{(1.7)^2 + (1.1)^2}$$

This means the chances are 68 out of 100 that the estimated difference based on the sample estimates would vary from the difference derived using complete census figures by less than 2.0 percent. The 68 percent confidence interval about the 12.1 percent difference is from

10.1 to 14.1, i.e.,  $12.1 \pm 2.0$ . A conclusion that the average estimate of the difference derived from all possible samples of the same size and design lies within a range computed in this way would be correct for roughly 68 percent of all possible samples. The 95 percent confidence interval is 8.1 to 16.1. Thus, we can conclude with 95 percent confidence that there is a significant difference between the percentages for 3 to 6 and 7 to 13 year old children whose mothers worked full-time and who were cared for by one of the parents while they were not in school.

**Standard error of a ratio.** The formula for the standard error of a ratio is:

$$\sigma\left(\frac{x}{y}\right) = \sqrt{\left(\frac{x}{y}\right)^2 \left[ \left(\frac{\sigma_x}{x}\right)^2 + \left(\frac{\sigma_y}{y}\right)^2 - 2\rho \left(\frac{\sigma_x}{x}\right)\left(\frac{\sigma_y}{y}\right) \right]} \quad (6)$$

In this formula, the ratio  $\frac{x}{y}$  can be a ratio of two estimated numbers or a ratio of percents.  $\sigma_x$  and  $\sigma_y$  represent the standard errors of  $x$  and  $y$ , respectively.  $\rho$  is the correlation coefficient between  $x$  and  $y$ . For the data in this report,  $\rho$  may be assumed equal to zero.

**Illustration of the computation of the standard error of a ratio of estimated percentages.** As mentioned above, 41.4 percent of the 3 to 6 year old children in February 1975 whose mothers worked full-time were usually cared for by one of the parents when they were not in school. The standard error of this estimated percentage is 1.7. Also, 53.5 percent of the 7 to 13 year old children in October 1974 whose mothers worked full-time had similar daytime care arrangements. The standard error of the estimate was shown above to be 1.1. The ratio of the percentage of 7 to 13 year olds with these characteristics to the percentage of 3 to 6 year olds with the same characteristics is 1.29. Thus, formula (6) shows the standard error of this estimated ratio to be

$$0.06 = \sqrt{\left(\frac{53.5}{41.4}\right)^2 \left[ \left(\frac{1.1}{53.5}\right)^2 + \left(\frac{1.7}{41.4}\right)^2 \right]}$$

Consequently, the chances are 68 out of 100 that the estimate would have been a figure differing from a complete census figure by less than 0.06. The chances are 95 out of 100 that the estimate would have been a figure differing from a complete census figure by less than 0.12 (twice the standard error). Thus, we can say with 95 percent confidence that the percentage of 7 to 13 year old children with these characteristics is between 1.17 and 1.41 times as large as the percentage of 3 to 6 year olds with these same characteristics.